



# Exhibit 24

<b>OnePlus Smartphones with Panorama Mode</b> <b>(Includes smartphones models: 3T, 5, 5T, 6, 6T, 7, 7T, 7 Pro, 7T Pro)</b>	
<b>Infringement of the '268 patent</b>	
<b>Claim 1</b>	<b>Evidence</b>
<p>1. A method performed by a computing device for combining images, the computing device having a processor, a memory, an image sensor, and a housing containing the processor, the memory, and the image sensor, the method comprising:</p>	<p>The OnePlus Smartphone performs a method by a computing device for combining images. The computing device has a processor, a memory, an image sensor, and a housing containing the processor, the memory, and the image sensor.</p> <p>For example, the Smartphone has a processor, a memory and an image sensor. [5] – [16]  In the Panorama Mode, the Smartphone combines multiple image frames to create a panoramic image.</p> <p><b>Camera</b></p> <p><u>The OnePlus 7 Pro camera offers powerful photo and video capabilities, including portrait mode, pro mode, slow-motion video, panoramic mode, and more.</u></p> <p>[1]</p>
<p>capturing, using the image sensor, a first image;</p>	<p>The OnePlus Smartphone capturing a first image using the image sensor.</p> <p>For example, the image sensor of the camera on the Smartphone takes multiple images when creating a Panoramic image in Panorama mode. In the image below, the red arrow indicates the first image as shown in the viewfinder of the Smartphone.</p>

	 <p>[4]</p>
<p>compositing an overlap strip from the first image onto a current field of view displayed via a viewfinder, such that while the image sensor is rotated, the overlap strip displayed via the viewfinder does not change while</p>	<p>The OnePlus Smartphone composites an overlap strip from the first image onto a current field of view displayed via a viewfinder, such that while the image sensor is rotated, the overlap strip displayed via the viewfinder does not change while the current field of view displayed via the viewfinder does change.</p> <p>For example, as the Smartphone is rotated from left to right, the overlap strip (shown between the red dotted lines in the two images below) is composited onto the viewfinder and does not</p>

<p>the current field of view displayed via the viewfinder does change;</p>	<p>change, whereas the current field of view (shown by the red arrow) does change.</p> 
<p>capturing, using the image sensor, a second image;</p>	<p>The OnePlus Smartphone captures a second image using the image sensor.</p> <p>For example, the image sensor of the camera on the Smartphone takes multiple images when creating a Panoramic image in Panorama mode. In the image below, the red arrow indicates the</p>

second image as shown in the viewfinder of the Smartphone.



identifying a first portion of the first image and a second portion of the second image;

The OnePlus Smartphone identifies a first portion of the first image and a second portion of the second image.

For example, in the first image below the first portion of the first image is indicated by the red arrow on the left, and the second portion of the second image is indicated by the red arrow on the right.



[4]

for each of a plurality of offsets, tabulating a measure of error in using the offset to align the first image with the second image; and


For each of multiple offsets, the OnePlus Smartphone tabulates a measure of error in using the offset to align the first image with the second image.

For example, the Smartphone needs to be moved slowly and in a straight line that follows the white dotted line displayed on the smartphone so that the offsets can be calculated to align the first and second images as part of the stitching process. The first image shows the alignment of

the first and second images in the area between the two red dotted lines. The red arrow indicates the white dotted line that the user needs to follow to minimize errors in the alignment process. The second image shows a poor panorama that results from not moving the smartphone in a straight line as instructed. The red arrow indicates an area of especially poor alignment.

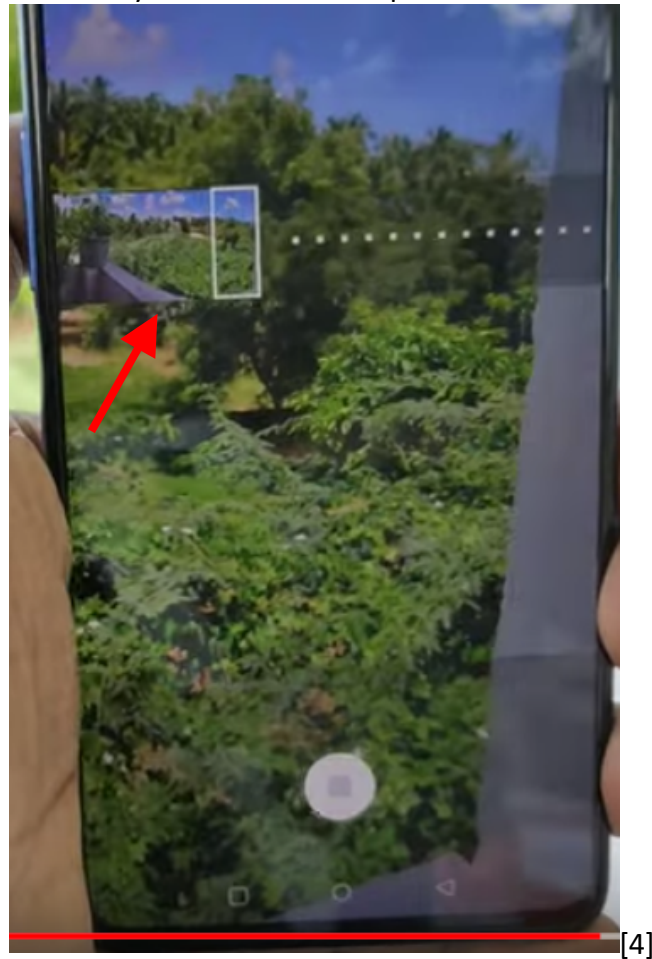


[4]

	 <p>[4]</p>
<p>creating a third image, based at least in part on one or more of the tabulated measures of error, that includes the first portion of the first image and the second portion of the second image.</p>	<p>The OnePlus Smartphone creates a third image, based at least in part on one or more of the tabulated measures of error, that includes the first portion of the first image and the second portion of the second image.</p> <p>For example, in the image below the upper part of the display shows a preview of the panorama (third image) that includes the first portion of the first and second images as stitched together</p>



using the measures of error. This panorama image can be saved as a single photo in the Photo Gallery of the Smartphone. The second image below shows an example of a panorama image created by a OnePlus 6 smartphone.



[4]

## Panorama

OnePlus isn't known for awesome panoramas, and the arbitrary limitation for left-to-right panning persists - what if you prefer to lock the exposure on the right end of the image? On a positive note, there's plenty of resolution (some 4,000px tall) and stitching, while still not perfect, has been improved since the 5T.



Panorama sample

[3]

### References:

[1] OnePlus 7 Pro User Manual: [https://www.oneplus.com/ca\\_en/support/manuals?from=foot](https://www.oneplus.com/ca_en/support/manuals?from=foot)

[2] OnePlus 7/7T Pro Complete Camera Guide and Review (Video): <https://www.youtube.com/watch?v=4ZRwnlyGoIQ>

[3] OnePlus 6 review: [https://www.gsmarena.com/oneplus\\_6-review-1776p5.php](https://www.gsmarena.com/oneplus_6-review-1776p5.php)

[4] How to take panorama mode pictures in OnePlus 7T (Video): <https://www.youtube.com/watch?v=F0r1DmzsHII>

[5] OnePlus 7T Pro:

[http://phonedb.net/index.php?m=device&id=15914&c=oneplus\\_7t\\_pro\\_5g\\_mclaren\\_edition\\_global\\_dual\\_sim\\_td-lte\\_256gb\\_hd1925\\_bbk\\_1920&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=15914&c=oneplus_7t_pro_5g_mclaren_edition_global_dual_sim_td-lte_256gb_hd1925_bbk_1920&d=detailed_specs)

[6] OnePlus 7 Pro: [http://phonedb.net/index.php?m=device&id=15191&c=oneplus\\_7\\_pro\\_premium\\_edition\\_global\\_dual\\_sim\\_td-lte\\_128gb\\_gm1913\\_bbk\\_guacamole&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=15191&c=oneplus_7_pro_premium_edition_global_dual_sim_td-lte_128gb_gm1913_bbk_guacamole&d=detailed_specs)

[7] OnePlus 7T: [http://phonedb.net/index.php?m=device&id=15728&c=oneplus\\_7t\\_dual\\_sim\\_td-lte\\_na\\_128gb\\_hd1905\\_bbk\\_guacamoleg&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=15728&c=oneplus_7t_dual_sim_td-lte_na_128gb_hd1905_bbk_guacamoleg&d=detailed_specs)

[8] OnePlus 7: [http://phonedb.net/index.php?m=device&id=15181&c=oneplus\\_7\\_premium\\_edition\\_global\\_dual\\_sim\\_td-lte\\_256gb\\_gm1903\\_bbk\\_guacamoleb&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=15181&c=oneplus_7_premium_edition_global_dual_sim_td-lte_256gb_gm1903_bbk_guacamoleb&d=detailed_specs)

[9] OnePlus 6T: [http://phonedb.net/index.php?m=device&id=14282&c=oneplus\\_6t\\_premium\\_edition\\_dual\\_sim\\_global\\_td-lte\\_a6013\\_128gb\\_bbk\\_fajita&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=14282&c=oneplus_6t_premium_edition_dual_sim_global_td-lte_a6013_128gb_bbk_fajita&d=detailed_specs)

[10] OnePlus 6: [http://phonedb.net/index.php?m=device&id=13390&c=oneplus\\_6\\_dual\\_sim\\_global\\_td-lte\\_a6003\\_128gb\\_bbk\\_enchilada&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=13390&c=oneplus_6_dual_sim_global_td-lte_a6003_128gb_bbk_enchilada&d=detailed_specs)

[11] OnePlus 5T: [http://phonedb.net/index.php?m=device&id=12551&c=oneplus\\_5t\\_dual\\_sim\\_global\\_td-lte\\_a5010\\_64gb\\_bbk\\_dumpling&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=12551&c=oneplus_5t_dual_sim_global_td-lte_a5010_64gb_bbk_dumpling&d=detailed_specs)

[12] OnePlus 5: [http://phonedb.net/index.php?m=device&id=11679&c=oneplus\\_5\\_dual\\_sim\\_global\\_td-lte\\_a5000\\_128gb\\_bbk\\_cheeseburger&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=11679&c=oneplus_5_dual_sim_global_td-lte_a5000_128gb_bbk_cheeseburger&d=detailed_specs)

[13] OnePlus 3T: [http://phonedb.net/index.php?m=device&id=10956&c=oneplus\\_3t\\_dual\\_sim\\_lte-a\\_na\\_64gb\\_bbk\\_rain&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=10956&c=oneplus_3t_dual_sim_lte-a_na_64gb_bbk_rain&d=detailed_specs)

[14] OnePlus 3: [http://phonedb.net/index.php?m=device&id=10207&c=oneplus\\_3\\_dual\\_sim\\_lte-na\\_a3000\\_64gb\\_bbk\\_rain&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=10207&c=oneplus_3_dual_sim_lte-na_a3000_64gb_bbk_rain&d=detailed_specs)

[15] OnePlus X: [http://phonedb.net/index.php?m=device&id=9256&c=oneplus\\_x\\_dual\\_sim\\_lte\\_na\\_bbk\\_onyx&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=9256&c=oneplus_x_dual_sim_lte_na_bbk_onyx&d=detailed_specs)

[16] OnePlus 2: [http://phonedb.net/index.php?m=device&id=8573&c=oneplus\\_2\\_dual\\_sim\\_lte-na\\_a2005\\_64gb&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=8573&c=oneplus_2_dual_sim_lte-na_a2005_64gb&d=detailed_specs)